AMENDMENT

Amendments to the claims are reflected in the listing of claims.

Listing of Claims:

1. (Withdrawn) DNA encoding an *Ehrlichia canis* immunoreactive surface protein p153, said DNA is selected from the group consisting of:

   (a) isolated DNA which encodes a p153 protein having the amino acid sequence of SEQ ID NO: 2; and

   (b) isolated DNA encoding said protein, wherein the sequence of said DNA differs from the isolated DNA of (a) in codon sequence due to the degeneracy of the genetic code.

2. (Withdrawn) A vector comprising the DNA of claim 1 and regulatory elements necessary for expression of the DNA in a cell.

3. (Withdrawn) The vector of claim 2, wherein said DNA encodes a p153 protein having the amino acid sequence shown in SEQ ID NO: 2.

4. (Withdrawn) A host cell transfected with the vector of claim 2, said vector encodes a p153 protein having the amino acid sequence shown in SEQ ID NO: 2.

5. (Withdrawn) The host cell of claim 4, wherein said cell is selected from group consisting of bacterial cells, mammalian cells, plant cells and insect cells.

6. (Currently amended) An isolated and purified polypeptide of *Ehrlichia canis* immunoreactive surface protein p153 encoded for by DNA selected from the group consisting of:

(a) isolated DNA which encodes a p153 protein having the amino acid sequence shown in SEQ ID NO: 2; ~~and~~

(b) isolated DNA differing from the isolated DNA of (a) in codon sequence due to the degeneracy of the genetic code;

(c) isolated DNA sequence comprising nucleotides 1080 to 1990 of *Ehrlichia canis* immunoreactive surface protein p153 gene;

(d) isolated DNA sequence comprising nucleotides 1950 to 2950 of *Ehrlichia canis* immunoreactive surface protein p153 gene; and

(e) isolated DNA sequence comprising nucleotides 2940 to 4220 of *Ehrlichia canis* immunoreactive surface protein p153 gene.

7. (Withdrawn) DNA encoding an *Ehrlichia chaffeensis* immunoreactive surface protein p156, said DNA is selected from the group consisting of:

(a) isolated DNA which encodes a p156 protein having the amino acid sequence of SEQ ID NO: 1; and

(b) isolated DNA encoding said protein, wherein the sequence of said DNA differs from the isolated DNA of (a) in codon sequence due to the degeneracy of the genetic code.

8. (Withdrawn) A vector comprising the DNA of claim 7 and regulatory elements necessary for expression of the DNA in a cell.

9. (Withdrawn) The vector of claim 8, wherein said DNA encodes a p156 protein having the amino acid sequence shown in SEQ ID NO: 1.

10. (Withdrawn) A host cell transfected with the vector of claim 8, said vector encodes a p156 protein having the amino acid sequence shown in SEQ ID NO: 1.

11. (Withdrawn) The host cell of claim 10, wherein said cell is selected from group consisting of bacterial cells, mammalian cells, plant cells and insect cells.

12. (Withdrawn) Isolated and purified *Ehrlichia chaffeensis* immunoreactive surface protein p156 encoded for by DNA selected from the group consisting of:

(a) isolated DNA which encodes a p156 protein having the amino acid sequence shown in SEQ ID NO: 1; and

(b) isolated DNA differing from the isolated DNA of (a) in codon sequence due to the degeneracy of the genetic code.

13. (Withdrawn) An antibody directed against the p153 protein of claim 6.

14. (Withdrawn) An antibody directed against the p156 protein of claim 12.

15. (Currently Amended) ~~A vaccine against canine ehrlichiosis~~ A composition comprising a p153 polypeptide of claim 6.

16. (Withdrawn) A vaccine against canine ehrlichiosis comprising the p156 protein of claim 12.

17. (Withdrawn) A method of determining whether a dog is infected with an *Ehrlichia* species, comprising the step of: determining whether serum from said dog reacts with *E. canis* p153 protein or *E. chaffeensis* p 156 protein, wherein reaction with the p153 protein or the p156 protein indicates said dog is infected with *Ehrlichia canis* and *Ehrlichia chaffeensis*, respectively.

18. (Withdrawn) The method of claim 17, wherein said protein is a recombinant protein.

19. (Withdrawn) The method of claim 17, wherein western blot analysis is used to determine whether the serum of said dog reacts with said protein.

20. (Withdrawn) The method of claim 17, further comprising the step of determining whether the serum from said dog reacts with *E. canis* p28 protein, wherein immunoreactivity to both the p153 and p28 proteins indicates said dog is infected with *Ehrlichia canis*.

21. (Withdrawn) A serodiagnostic kit for determining whether a dog is infected with an *Ehrlichia* species, said kit comprising: a) one or more immobilized Ehrlichia antigens selected from the group consisting of p153, p43, p156 and p28; b) appropriate dilution buffers for dog serum; c) an anti-dog serum second antibody linked to a reporter molecule; and, d) appropriate reagents for detection of said reporter molecule.

22. (Withdrawn) The kit of claim 21 wherein said Ehrlichia antigens are immobilized on a membrane or a microtiter plate.

23. (Withdrawn) The kit of claim 21, wherein said reporter molecule is selected from the group consisting of luciferase, horseradish peroxidase, β-galactosidase, and fluorescent labels.

24. (Withdrawn) A method of determining whether a dog has been infected with an *Ehrlichia* species, comprising the steps of: extracting DNA from the blood of said dog; and performing PCR amplification on said DNA with oligonucleotide primers specific for the *E. canis* p153 gene or the *E. chaffeensis* p156 gene; separating the resulting PCR product by size, wherein positive detection of an appropriately sized amplification product indicates infection with *E. canis* or *E. chaffeensis*.

25. (Withdrawn) The method of claim 24, wherein said PCR product is detected by gel electrophoresis.

26. (Withdrawn) A kit for determining whether a dog is infected with an *Ehrlichia* species, said kit comprising: a) reagents for DNA extraction from blood; b) p153-specific or p156-specific oligonucleotides; reagents for DNA extraction from blood; and, c) reagents for PCR amplification.

27. (New) The isolated and purified polypeptide of claim 6, wherein the protein is immobilized on a surface.

28. (New) The isolated and purified polypeptide of claim 27, wherein the surface is a membrane.

29. (New) The isolated and purified polypeptide of claim 27, wherein the surface is a microtiter plate.

30. (New) The isolated and purified polypeptide of claim 6, wherein the polypeptide is an *Ehrlichia canis* immunoreactive surface protein p153 polypeptide.

31. (New) A composition comprising a p153 polypeptide of claim 30.

32. (New) The isolated and purified polypeptide of claim 30, wherein the protein is immobilized on a surface.

33. (New) The isolated and purified polypeptide of claim 30, wherein the surface is a membrane.

34. (New) The isolated and purified polypeptide of claim 30, wherein the surface is a microtiter plate.